Transaction design standards for the operationalisation of fairness and empowerment in proactive contracting

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Summary: Fairness and empowerment are aspirational concepts in law. The scientific and professional legal community has not convened on their substance and the ways they can be achieved. Therefore, there is an inherent risk that the values they entail become lip services that lack determination and reliability. This section addresses the problem revisiting and expanding the Taxonomy of Legal Usability and User Experience Factors, one of the first attempts to synthetize parametric standards for transaction design. The paper adds factors and criteria that operationalise procedural legitimacy principles for transacting that increase the proactive capacities of contracting activities to prevent and/or resolve disputes. It speaks of transactions as the smallest constitutive units of all exchange relations that allow upgrades, assuming that planning, negotiating and managing contracts, as well as other legally relevant products, services, interactions, processes and systems, will benefit from an integrated epistemological perspective and its institutionalization.

Keywords: transaction design, legal usability factors, procedural fairness, legitimacy parameters, legal design standards, dispute resolution.

1 Introduction

A growing number of academics and practitioners from various fields have engaged in the development of the legal design as an independent study area, coinciding on the need to turn the law into a more collaborative system that is user-friendly, accessible and just. However, a challenge that this emerging community faces is the need to establish general methodology tenets without

renouncing to its dynamic and interdisciplinary character. Unavoidably, the scientific standing of legal design (be it on its own or as an area of convergence for various fields of study) will be determined by the existence and degree of institutionalization of concrete, measurable and transferable parameters to evaluate the quality of legal Products, Services, Processes, Interactions and Systems (SSIPPs). At the core of the current discussions on the methodological dimensions lays not only a unique opportunity to balance those calls, but also an enormous responsibility that is seldom highlighted, and it is concerned with the very nature of the legal system and the notions of validity and due process. It is safe to state that so far, no legal innovation technically disrupts a legal order for it cannot rival or displace legal standards. Novel proposals may nevertheless affect the practice in radical ways and substantiate claims for legal reform. The scope of the present discussion will be framed with this last goal in view, by grounding potential legal categories focused on transferable factors and measurable criteria for the design and assessment of Usability (UX) as an attribute in law, and User Experience (UXI) when related to fairness and empowerment. The consolidation of these human centered transaction design standards could raise the methodological status of the legal design stream of research, and allow for it to play a fundamental role in smoothing the pathway to legal automation. It could do so preventing and counterbalancing the spread of regressive models of exchange inherent to technologies such as blockchains in smart contracts.[1]

This contribution advances are transaction design parameters included in the Taxonomy of Legal UX and UXI factors synthetized by Solarte Vasquez, Järv and Nyman-Metcalf.[2] They operationalized collaboration as human centeredness in transacting, contracting and contractual management, according to a set of parametric standards of easy uptake and compatible with the current European Union (EU) laws and policies. The synthesis of the legal UX and UXI (UX/UXI) parameters was initially published to support transaction design in Smart Contracting (SC),[3] but SC is a strategic lawyering approach that also supports

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1   Regressive models are the non-relational, also called discrete, in contrast with relational exchange interactions as referenced to MacNeil's theory and explained in SOLARTE-VASQUEZ, Maria Claudia and NYMAN-METCALF, Katrin. Smart Contracting: a Multidisciplinary and Proactive Approach for the EU Digital Single market. *Baltic Journal of European Studies*, 2017 vol. 7, no. 2, p. 208. See also MACNEIL, Ian R. Relational Contract Theory: Challenges and Queries. *Northwestern University Law Review*, 2000, vol. 94, no. 3, p. 877 and HUGE, Collins. Is a Relational Contract a Legal Concept? In DEGELING, Simone, EDELMAN, James and GOUDKAMP, James (eds). *Contract In Commercial Law*. Thomson Reuters, 2016.

2   See: SOLARTE-VASQUEZ, Maria Claudia, JÄRV, Natalia and NYMAN-METCALF, Katrin. Usability Factors in Transactional Design and Smart Contracting. In KERIKMÄE, Tanel and RULL, Addi (eds). *The Future of Law and eTechnologies*. Springer, Cham 2016, pp. 149–176.

3   Transaction design was stated by SOLARTE VASQUEZ, JÄRV and NYMAN-METCALF, *supra* note 2 to be about human needs and interest-centered focus in the planning, preparation, implementation and management of legally relevant interactions and their inter-

agency, empowerment and legal literacy and responsibility in various other regulatory domains.[4] It developed and actualized the proactive perspective concepts, with tools that resulted in the progress of the conflict management and dispute prevention field in particular.[5] The Legal UX/UXI Taxonomy possesses transferable value because it deals with transactions, the smallest components of any exchange interaction that admit upgrades.[6]

Insights on procedural fairness helped to identify the factors and criteria that were added to the taxonomy. The revised version is readily applicable to screen and monitor the quality of all legally relevant products, services, interactions, processes and systems (PSIPSs), and their interfaces, irrespective of field (industry) and sector (public or private).[7] It is useful to guide the responsible and responsive design of analogous and automated decision making and dispute resolution systems.

The tasked of convening on standards that could tackle the legal needs of the times without compromising on matters of validity and legitimacy, is one of the most important epistemological imperatives for the legal design community, and promoting this conversation a key contribution of this paper to the dialog on the transformation of the law and the institutionalization of legal innovation.

The next section explains the background and introduces the state of the art revisiting the concept of UX/UXI as a legal attribute, its dimensions, and other elements of the taxonomy. The third section explains the new factors and criteria to measure fairness and empowerment, categorizing them as legitimacy standards, and referring to the links between transacting and contracting and dispute prevention and resolution. The last section concludes with some research agenda recommendations.

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faces. It is inspired on principles, and applies techniques and parametric standards to operationalize smart contracting practices, thus, pursuing a quality assessment of outputs according to unambiguous parameters.

4　More on the complete characterization (capacities and theoretical grounds) and substantiation (principles, techniques and scope of application) of the proposal in: SOLARTE-VASQUEZ and NYMAN-METCALF *supra* note 1.

5　SOLARTE-VASQUEZ, JÄRV and NYMAN-METCALF, *supra* note 2, pp. 154–157.

6　*Ibid*.

7　SOLARTE-VASQUEZ, Maria Claudia and HIETANEN-KUNWALD, Petra, Responsibility and Responsiveness in the Design of Automated Dispute Resolution Processes. In SCHWEIGHOFER, Erich, HÖTZENDORFER, Walter, KUMMER, Franz and SAARENPÄÄ, Ahti (eds). *Verantwortunsbewusste Digitalisierung/Responsible digitalisation. Proceedings of the 23nd International Legal Informatics Symposium IRIS 2020.* Bern: Editions Weblaw, 2020, pp. 451–459. On procedural fainess read: HOLLANDER-BLUMOFF; Rebecca., Law and Social Psychology Methods in CREUTZFELDT, Naomi, MASON, Marc, McCONNACHIE, Kirsten (eds.). *Routledge Handbook of Socio-Legal Theory and Methods*, NY, 2019, Part II, Chapter 12.

2 Background

Transactions are commonly understood as the exchange of things of value.[8] They could be formalized in traditional formats such as clauses and provisions, and assembled in contracts, pacts or agreements. Thus, transaction design is about conceiving, planning and representing instances of exchange interactions in whole or in part. The determination of transaction design standards is necessary to develop the methodology applicable to legal design in general and eventually, to consolidate this stream of research as an independent study field. The high level of abstraction of the Legal UX/UXI taxonomy works to the effect of its transferability across PSIPSs, notwithstanding its practical significance.

Transactions are distinguishable within processes where rights and duties are created or modified as well, such as in the contract-contractual management stages identified in the literature.[9] Transactions register sequences of relational interactions that expose the parties to various and often complex legal information and commitments. They are normally represented in one or various layers of texts,[10] especially in digital and interactive environments where communications are mediated by technology. The mediating device displays interfaces sketching representations of processes, systems, the underlying relationships between the parties, and also the interactions between the users and the systems.

The proactive transaction design strategies minimize information asymmetries, reinforcing legal competences and empowerment. Legal communication must be functional and usable, which presupposes the accurate representation of information about the legal implications of effectuating any given transaction. Transacting in turn, could be perceived as uncomplicated, amicable, not intimidating and fair. Satisfaction in legal negotiations and interactions may increase the disposition and commitment of the parties towards agreements as well as the likelihood of compliance. If to explain it in conflict management and dispute prevention terms, procedural justice adjustments are linked to positive perceptions on collaboration and fairness and vice versa. Hollander-Blumoff is known for having explored satisfaction and fairness as the effect of procedural justice on dispute resolution outcomes, in the context of legal negotiation and other collaborative Alternative Dispute Resolution (ADR) methods,[11] but that

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8   These things could be tangible or intangible. When the transactions are mentioned and defined by law or statutes, they are considered legal categories.

9   SOLARTE-VASQUEZ and NYMAN-METCALF, *supra* note 1, p. 219.

10 A text is understood as a message on any medium, no matter the format, for example: figures, films, pictures, words, and even sounds. Creating separate layers is beneficial to target different needs. Each text may contain more than one version of the same information and consist of 'stackable' modules and extensions. Texts are static, such as plain documents, or dynamic when interactive. Read more in SMITH, Henry E. Modularity in Contracts: Boilerplate and Information Flow. *Michigan Law Review*, 2006, vol. 104, p. 1175.

11 HOLLANDER-BLUMOFF, Rebecca. Formation of Procedural Justice Judgments in Legal Negotiation. *Group Decision and Negotiation*, 2017, vol. 26, issue 1, no 3, pp. 19–43.

procedural justice concerns could influence the way individuals assess their contentment with negotiated agreements was suggested by others much earlier.[12]

Transaction design is not limited to contracting or the private sector but it is mostly consumer, user and agent oriented, and this is why it could be easily adopted and spread by organizations in their strategic contracting and contractual management practices.[13]As a matter of field coherence, there are only gains to be expected from the institutionalization of the transaction design guidelines and standards through mimetic and normative isomorphism processes.[14] In addition, everyone could benefit from transaction experiences becoming positive and reassuring. The public in general would be more invested in exercising their rights and complying with their obligations, leading to the expansion of a collaborative transaction culture and resulting in fewer disputes. What is more, such improvements would facilitate the transition to legal automation where discrete interactions will become norm.

2.1 Legal Usability (UX) and User Experience (UXI)

The Taxonomy of Legal UX/UXI factors introduced a set of interaction design parameters that resulted from the synthesis of the best practices of contract drafting and the UX heuristics and research methodologies of Human Computer Interaction (HCI). These parameters, in spite of being external to the law as a system, complement the essential legal and institutional legitimacy criteria applied to the traditional assessment of contracting and other regulatory activities. The taxonomy systematized these guidelines and the knowledge that was accumulated by the relational and proactive law schools of thought to formulate factors and criteria to measure the dimensions of legal UX/UXI. While sharpening the scope of legal design as an independent area of study, it did not intend to create strict methodological barriers but to help the coupling of these transdisciplinary efforts with the legal system in an unambiguously fit.[15] The taxonomy accomplishes the smooth integration of contract, design, management,

12 HOLLANDER-BLUMOFF, Rebecca and TYLER, Tom R. Procedural Justice in Negotiation: Procedural Fairness, Outcome Acceptance and Integrative Potential. *Law and Social Inquiry*, 2008, vol. 33, no. 2, pp. 473–500.

13 Discussed in Solarte Vasquez, Maria Claudia, Rungi, Mait, and Nyman-Metcalf, Katrin Merike. Perceptions on Self-regulation and Transaction Friendliness Relevant to Smart Contracting. *International Journal of Law and Management*, 2019, vol. 6, pp. 286–308.

14 SOLARTE VASQUEZ, JÄRV AND NYMAN-METCALF, *supra* note n 2. Transaction design introduced the quality assessment criteria to legal interactions, mainly contracts and any other legal documents and communications. See: DiMAGGIO, Paul J., and POWELL, Walter W. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 1983, pp. 147–160 on isomorphism and institutionalization processes.

15 HIETANEN-KUNWALD, Petra and HAAPIO, Helena. Applying Legal Design in Dispute Prevention and Resolution. *Legal Design roundtable 2020 conference,* Brussels/virtual, 1–2 April 2020, p. 4.

and smart regulation theories, concepts and principles, with a pragmatic proposal that reflects what could be said to be the state of the art on the methodology of this emerging field of study.

The overlap between human centered design promoted by HCI and the principled negotiation methods for dispute prevention logic, was identified prior to information technologies having become commonplace in the design of digital, interactive and automated legally relevant PSIPSs.[16] The taxonomy provides a checklist with parametric criteria that was initially proposed to assess regulatory quality and support the transformation of the pre-digital legal practice into a more proactive one. The criteria have become imperative in the digital and automated environments where experiencing the system is likely to affect the parties' autonomy, add layers of complexity to transactions, and further limit people's perception of fairness and agency or their sense of empowerment.

UX is a general design attribute that is measured by the ease of use of any artefact.[17] The most general UX criteria are the three dimensions well institutionalized and explained in the literature: efficiency, effectiveness and satisfaction.[18] In HCI, UX indicates rather narrowly, ease and simplicity when interacting with systems, and measures the user-centeredness of a design.[19] The heuristics of the UX and UXI assessment tools are founded on ergonomics and remarkably similar to principles and techniques of conflict management such as ways of knowing the user, understanding of needs and interests, participation, integration and collaboration, control of the processes or co-design, continuous iteration, reducing transaction costs, aiming at friendly and satisfactory outcomes that match the expectations of the users, etc.[20] From the legal standpoint, when the validity

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16 Read in SOLARTE-VASQUEZ, JÄRV AND NYMANN-METCALF, *supra* note n 5, and in: ROSSI, Arianna and HAAPIO, Helena. Proactive Legal Design: Embedding Values in the Design of Legal Artefacts. In SCHWEIGHOFER, Erich, KUMMER, Franz and SAARENPÄÄ, Ahti (eds). *Internet of Things. Proceedings of the 22*nd *International Legal Infomatics Symposium IRIS 2019.* Bern: Editions Weblaw, 2019, pp. 537–544 about a recent applications of the proactive perspective.

17 BEVAN, Nigel, KIRAKOWSKIBAND, Jurek, and MAISSELA, Jonathan. What is Usability? *Proceedings of the 4*th *International Conference on HCI,* Stuttgart, 1991.

18 International Organisation for Standardisation (ISO). [online]. Available at: database: <www.iso.org/obp/ui/#iso:std:iso:9241:-11:ed-2:v1:en> and <www.iso.org/obp/ui/#iso:std:iso:9241:-11:ed-2:v1:en:sec:3.1.1> accessed 18 April, 2020. On measuring HCI UX, find BEVAN, Nigel and CURSON, Ian. Methods for Measuring Usability. In HOWARD, Steve, HAMMOND Judy and LINDGAARD Gitte (eds). *Human Computer Interaction INTERACT '97.* Springer, 1997.

19 NIELSEN, Jakob. 10 Usability Heuristics for User Interface Design. *Nielsen Norman Group* 1, 1995, and REDSTRÖM, Johan. Designing Everyday Computational Things. *Gothenburg Studies in Informatics,* 2001, n 20.

20 Human centered design, in general, shares purpose with some of the principled conflict management and dispute resolution techniques and methods. The principled negotiation approach was developed by Fisher, Ury, and Patton and published in the book: Getting to Yes, at the Harvard Law School (FISHER, Roger, URY, William, and PATTON, Bruce.

conditions are met, legal acts come into effect and are enforceable in disregard of extrinsic considerations, but if the legal needs and interests of the people were taken into account, their transactional experiences and interactions during contracting processes and about systems could be less intimidating, more accessible and satisfactory. In this light, procedural justice components could be connected with some of the UX/UXI factors of attribution, on satisfaction in particular. Even though these are not normative concerns, they have been acknowledged to apply to the strategic design of legally relevant PSIPS and characterize the good practices.[21] Furthermore, UX introduces distinct collaborative features to PSIPSs, improving communication clarity, understanding, trustworthiness, and engagement, and encouraging responsible compliance in the benefit of all the parties involved, and for these reasons it is seen to put into effect the principles of good faith and fair dealing in contracting.[22]

In sum, UX/UXI refers to objective, subjective and relational dimension and factors that operationalize user centeredness also in law.[23] UX/UXI should eventually constitute a substantial requirement in contracting, when looking at the way it affects understanding, consent, the validity of contracts, and the lawful exercise of contractual freedoms. The importance of this attribute could become critical if the spread of computational methods in law is encouraged in neglect of the social/relational character of legal agreements.

2.2 Restatement of the classification of attributes, dimensions and factors

In the original proposal, two taxonomies were synthetized into one, attending to the compatibilities of the criteria and the feasibility of their adoption and application in the legal practice. The first grouped what were considered the minimum UX/UXI requirements in HCI and could be anticipated to match standards and quality criteria popularized in the legal field.

The primary level of usability as a quality attribute in design consists of three traditional dimensions applicable to most system assessments, no matter the field: Effectiveness, Efficiency, and Satisfaction. Each dimension results from the

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Getting to yes: Negotiating agreement without giving in. New York: Penguin 2011. A similar take on the perspective is available in LENS, Vicky. Principled Negotiation: A New Tool for Case Advocacy, 2004, *Social Work,* vol. 49, no. 3, p. 506.

21 The most prominent research on legal usability has concentrated on visualization, consult for example: PASSERA, Stefania. Enhancing Contract Usability and User Experience Through Visualization – an Experimental Evaluation. *16th International Conference on Information Visualisation* IEEE 2012.

22 Read more in: ZIMMERMANN, Reinhard and WHITTAKER, Simon (eds). *Good Faith in European Contract Law*. Cambridge: Cambridge University Press, 2000.

23 *Ibid, p. 19*. On human centered design principles consult NORMAN, Don, *The Design of Everyday Things.* Basic Books, 2013. In connection to human rights look in: BUCHANAN, Richard. Human Dignity and Human Rights: Thoughts on the Principles of Human-Centered Design. *Design Issues*, 2001, vol. 17, no. 3, p. 35.

verification of several components of attribution or factors.[24] The components of attribution are or denote criteria that are measurable according to defined and well substantiated parameters. In HCI, *Effectiveness* is the first, referring to the extent to which goals or tasks could be accomplished and is determined by factors that measure the relevance and topicality of the content, clear information architecture, completeness, visibility, cognoscibility, relatability (mapping with real world conventions), communication through design, and error prevention and navigation (in interactive systems only). The standard factors could be viewed as the features of a functional interactive system. *Efficiency* is the second dimension that represents the degree of effort required for completing tasks or achieving goals, denoting the relationship between inputs and outputs. The components of attribution that measure *efficiency* are readability, consistency, information visualization standards, learnability, flexibility, and the amount of control that the user has of the system (when it is interactive). The third UX/UXI dimension is *satisfaction*. It is evaluated according to three factors: the engagement of the user, the acceptability and friendliness of the interface design in terms of aesthetics, and how pleasant the transaction experience is or could made to be. These last components of attribution should be adjusted according to the requirements of each interaction, its purposes, the users, and other context specific variables.

The second taxonomy included in the original formulation, classified quality legal drafting standards drawing from plain language criteria, lean contracting and some of the general principles of contract law and theory. It was also informed by the preventive and proactive lawyering approach.[25] The classification excluded validity and its constitutive elements for being conditions established by law that design cannot substantially alter. Contrasting with the first, the focus in this taxonomy was on qualitative parameters such as the relational and collaborative orientation, and on criteria aimed to facilitate friendlier transactions and exchange experiences.[26]

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24 See, for instance, BRINCK, Tom, BUNYAN, John, GERGLE, Darren, WOOD, Scott D., BLYTHE, David, and MCREYNOLDS, Tom. *Designing Web Sites that Work: Usability for the Web,* Morgan Kaufmann, 2002, and SHNEIDERMAN Ben, PLAISANT, Catherine, COHEN, Maxime, JACOBS, Steven, ELMQVIST, Niklas and DIAKOPOULOS, Nicholas. *Designing the User Interface: Strategies for Effective Human-computer Interaction.* Pearson, 2016.

25 SOLARTE-VASQUEZ, Järv and NYMANN-METCALF, *supra* note 2, p.167.

26 Criteria on effective drafting are a combination of technical linguistic skills and relational and proactive competence in the negotiation and drafting of legal documents as well as a positive attitude to ensure a comfortable transactional experience. The discussion on good regulatory practices is not new. Look for instance in HILLMAN, Robert A and RACHLINSKI, Jeffrey J. Standard-Form Contracting in the Electronic Age. *New York University Law Review*, 2002, vol. 77, no. 2, p. 429 about standardization and in DAVIS, Kevin E. Contracts as Technology. *New York University Law Review*, 2013, vol. 88, no. 1, p. 83. The plain language movement could be linked to consumer protection activism but within the production of rules. See [online]. Available at: <www.plainlanguagenetwork.org> and in <www.clarity-international.net>, accessed 8 April 2020 where these factors are spelled out and discussed extensively.

11 factors in total, under the same UX/UXI dimensions, summarized well-known concerns on contracting capabilities in terms of observable qualities, characteristics, and expected results. The *efficiency* standards are listed first, to follow a more inductive flow:[27] readability (plain language and information visualization principles, and standardized terms),[28] consistency (clarity – standard formats), and organization (information flow and placement). These consisted of basic 'good drafting' practices viewed from a relational contracting perspective that could apply to several stages in the relevant processes.[29] The *effectiveness* factors are properties displayed by the interactions, once completed: completeness, collaborative, communication effect (consensus), pleasant. The factors of attribution to evaluate *satisfaction* are awareness, understanding, agreement and compliance, and assumed to relate to stages in the series of interactions within processes where informed consent, engagement and participation should lead to the desired outcome and/or compliance. More precise criteria on these last set of factors are expected to emerge as legal design evolves. This dimension is intriguing and unlocked the potential of design in the creation and scientific evaluation of experiences of fairness and justice, trust and empowerment.[30]

The synthesis of the classifications explained above is succinctly outlined in Table 3, with a few adjustments to highlight the relational and human centered capacities of these standards. It continues to divide the UX/UXI attribute into the three primary dimensions of the international standard of usability. Efficiency, effectiveness and satisfaction, in this order, were specified by 18 parametric categories or their factors of attribution.

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27 Poor language is the leading contractual inefficiency reported. The use of plain language minimizes this problem and aids comprehension. Plain language is legible, has unity (coherency and consistency or syntax) and is clear (intelligible and precise). Look in SIEDEL, George and HAAPIO, Helena. *Proactive Law for Managers*. New York: Routledge, 2016, and in SCORSONE, Eric. New Development: What are the Challenges in Transferring Lean Thinking to Government? *Public Money and Management*, 2008, vol. 28, no. 1, p. 61, for some examples of lean thinking applications.

28 The popularity of the research and activism on legal visualization has contributed to the formation of the legal design community, but may have also deterred the epistemological consolidation of the field within disciplines. The visualizations of the law must be restrictive (not all visual representations are valid, accurate, or more understandable) and consider semiotics and legal theory doctrines.

29 On the relational view about contracts see MACNEIL, Ian R. Relational Contract: What We Do and Do Not Know. *Wisconsin Law Review*, 1985, vol. 1985, p. 483, and consult BRAUCHER, Jean. Contract Versus Contractarianism: The Regulatory Role of Contract Law. *Washington Lee Law Review,* 1990, vol. 47, no. 4, p. 697, who speaks of sustainable contractual relations attending to factors such as fairness.

30 The meanings of fairness in negotiating and contracting could be better researched using carefully selected and objective standards. Exploring satisfaction and the experience of justice must not result in relativization of the rules of application of the law or the legal system.

Table 1: Combined Taxonomy of UX/UXI Factors for transaction Design

UX Taxonomy components for transaction design		
Efficiency	Effectiveness	Satisfaction
Readability – clarity	Completeness	Awareness (taking notice)
Consistency	Relational and proactive (collaboration values and logic)	Understanding (knowing)
Organization		Consensus (wilful participation, engagement)
Information visualization	Communication effect leading to consensus and satisfaction	Compliance (action)
Learnability	Pleasantly memorable – friendliness	Overall satisfaction with the transacting experience, and
Flexibility		
User control	Sustainability	Sustainability of the agreement

Source: adapted from the Combined Taxonomy of Usability Components Applicable to Transactions.[31]

Readability remains the first efficiency factor affecting the understanding, which is the end goal of any communication process and a correlated factor of attribution under satisfaction. Individual users must be able to take notice and identify the coded information in written or pictorial texts. The UX of specialized language is diminished by default, and in law it is composed by complex legal categories that must not be misrepresented, loosely interpreted or replaced by other conventional or non-conventional signs or terms.[32] Consistency and organization are UX standards in HCI that may support the unity and coherence of legal texts (design, structure, navigation, etc.), and decrease cognitive tensions by providing a logical informational flow. These factors increase content reach, accessibility and visibility, which are concepts of inclusion that promote the participation and engagement in and with legal transactions and processes. Information visualization is a factor that has been significantly developed though research and in the practice, and depends on the adequate calibration of the rest of the factors of attribution of the efficiency dimension. The findings on composition guidelines for drawings, icons, and flowcharts could add to the specification of this taxonomy in regard to this category.[33] Learnability or the

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31 SOLARTE-VASQUEZ and NYMAN-METCALF, *supra* note 1, p. 229.

32 Exceptionally, the *Creative Commons Icons*. [online]. Available at: <http://creativecommons.org/>), and traffic signs are acceptable conventions examples, but they are duly agreed upon or formally institutionalized before producing any legally relevant effect.

33 Visualization in law has not followed the information visualization criteria of the data management sciences where precision and recall, indicate correctness and completeness of the information represented graphicaly. In law, the tensions between the need for accuracy and the proven benefits of clarity promoted by plain language initiatives, visualization and legal design are not trivial matters. Visuals may increase the risk of errors, posing

fluency of the logic of use of texts, and participation in processes and systems restates that the simpler the design, the faster they are used, learned and navigated.[34] The last two, flexibility and user control factors of attribution examine the affordances of interactive systems and their interfaces objectively, which in turn condition to a significant extent the users' empowerment. Flexibility means that the design accommodates to the users, be them experts or novices, rather than the other way round. The user's control allows a sense of competence and disallows the system to take over. Human centered PSPIS and their interfaces should not be stiff, locked or induce irreversible processes, because a system should be prevented from regulating on behalf of the users. It means that definite commands/transactions are kept to the minimum and correcting mistakes or resetting the system are possibilities by default ('undoing'). UX is not an attribute of legally relevant PSPISs that discourage or diminish the parties' autonomy or where human agency is fully disabled.[35]

Under effectiveness, the table lists completeness referring to various outcomes, content integrity and wholeness first. The second is the relational and proactive factor, said of features that realize some collaboration values and logic such as needs-centered affordances, mutual gain, non-discreetness of the transactions, and so on. Communication effect is the third, measurable if the design relied on data enrichment techniques such as the graphic and technical layering of information with colour, shapes, textures, and prompts to facilitate understanding and informed consent. The fourth is memorability of the design achieved through friendliness of use of the product or service and of the participation in processes and interaction with systems. The last is sustainability, which indicates the continuous relevance of any given PSIPS and its interface, and the interactions or relationships they may capture.

The factors of attribution to verify for satisfaction are awareness, understanding, agreement and compliance, which are in line with the trajectory of interactions and processes where informed consent, engagement and participation would lead to the desired outcome. More precise criteria on these largely subjective set of factors is expected to emerge as legal design evolves and integrates legal theory and procedural law knowledge. Satisfaction is a positive quality that shows 'responsible/accountable effectiveness,' when it encourages inclusion,

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significant epistemic questions that are unsolved. The establishment of parameters and the refinement of criteria are positive steps forward, allowing for substantial transformations, but respecting the values that the legal system is tasked to protect.

34 Read in MARRELLA, Andrea and CATARCI, Tiziana. Measuring the Learnability of Interactive Systems Using a Petri Net Based Approach. *Proceedings of the 2018 Designing Interactive Systems Conference 2018 – DIS '18*, ACM Press 2018, pp. 1309–1319, an example of further methodological specifications of this factor of attribution.

35 Smart contracts would be an example of a distributed system of superior operational virtues (efficiency) but inferior bearings on legal values, and negligible UX credentials. Read in: RASKIN, Max. The Law and Legality of Smart Contracts. *Georgetown Law Technology Review*, 2017, vol. 1, no. 2, p. 304.

participation, accurate understanding, and authentic user empowerment. Traditionally, to the law, and as far as the emergence of rights and duties is concerned, individual perceptions on transacting processes and the contracting and contractual experiences are irrelevant. No legal sanctions are affected by how people may want or feel about them. The proactive law stance, in contrast, assumes that responsive PSPISs should be correlated to satisfaction because they are more likely to be perceived as just and fair, which would foster engagement and compliance.

3 Procedural fairness standards for transaction design

Improving the accessibility to the legal system inspires legal design thinking and is often invoked by the legal design community.[36] A central claim consists on that human centredness[37] helps prevent[38] and resolve legal problems,[39] satisfy some legal needs, and increase access to justice. This vision is accompanied by a view on empowerment. People should not only gain more access, but also improve their participation during legally relevant interactions and processes and be able to handle their own affairs appropriately. As attractive as this may sound, there is no consensus about the meaning of access to justice and the ways to achieve it, or regarding legal empowerment, and how to improve it.[40] This is also true for the standards of justice in the preventive and proactive law practice.

Cappelletti, Garth an Trocker,[41] pioneers in the access to justice movement, distinguished between three waves of access to justice. The first was concerned with providing individuals with affordable legal representation.[42] The aim was to make the legal services and aid available to those who cannot afford it. This view is strongly related to the state courts and legal standards. It is also related to the idea that people mostly seek to vindicate their substantive legal rights in courts

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36 [online]. Available at: <http://legaldesignthinking.com/>, < www.legaldesignalliance.org/> and <https://law.stanford.edu/organizations/pages/legal-design-lab-#slsnav-our-mission> Accessed 8. April 2020.

37 HAGAN, Margaret. A Human-Centered Design Approach to Access to Justice: Generating New Prototypes and Hypotheses for Interventions to Make Courts User-Friendly, *Indiana Journal of Law and Social Equality*, 2018, vol. 6, no. 2, p. 199.

38 PITKÄSALO, Eliisa and KALLIOMAA-PUHA, Laura. Democratizing Access to Justice: the Comic Contract as Intersemiotic Translation. *Translation Matters*, 2019, vol. 1 no. 2, p. 30.

39 *What is Legal Design*? [online]. Available at: <www.legaldesignalliance.org> accessed 9 April 2020.

40 SUSSKIND Richard. Online Courts and the Future of Justice, Oxford: Oxford University Press, 2019, p. 66.

41 CAPPELLETTI, Mauro, GARTH, Bryant and TROCKER, Nicolò. Access to Justice, Variations and Continuity of a World-Wide Movement. *Rabels Zeitschrift für ausländisches und internationales Privatrecht/The Rabel Journal of Comparative and International Private Law*, 1982, vol. 46, no. 4, p. 664.

42 *Ibid*, p. 672.

or other institutionalized forms of dispute resolution. In its narrow form, access to justice is access to the courts, as guaranteed by the law. The second wave of access to justice was concerned with the representation of diffuse interests such as the effective advocacy and representation of consumer interests, the environment and others.[43] The aim was to remedy a lack of legal entitlement that was often an obstacle to the representation of fuzzy claims or of certain groups. This can be overcome by means of class actions and other forms of collective claims. The third wave of access to justice deviated from the original focus on legal representation. It encouraged the use of the entire spectrum of dispute resolution processes and emphasized alternative methods, such as mediation or conciliation as suitable means to furnish access to justice.[44]

The type of access that places emphasis on the admittance to the court system or other institutionalized forms of dispute resolution and on getting legal services is still regarded as the main way to vindicate substantive legal interests, but the proactive law and the legal design movements have pushed for a transformative focus.[45] The so-called third wave paid attention to out of court and ADR processes, but all the attention still centred on compromising, not on resolution, integration, compliance promotion or other routes of access to justice.

Todays' understanding represents a fourth wave, with a broader scope that according to Susskind is about empowering the members of a society to contain and avoid disputes, by fostering their self-reliance capacities to manage their legal issues.[46] Access to justice in this sense brings about new challenges in thinking about fairness and decision making in dispute prevention and resolution, just as it does in contracting. Contracts themselves have a significant role in preventing and resolving disputes. They are used to regulate relationships in accordance with the parties' specific needs and goals.[47] They shape future decision making processes, and how the contracting parties should agree on the outcomes.[48] Contracts enable parties to determine what is best for them and to manage relationships and disputes collaboratively. Well conceived contracting processes (based on negotiation, facilitation or mediation), should create a sense of fairness or at least refrain from becoming detrimental to what may be perceived as just.

The traditional court centred dispute resolution approach pursued two different types of fairness: on the one side, fairness of the outcome or substantive fairness and on the other side, the objective procedural fairness or due process.

43　*Ibid,* p. 679.

44　*Ibid,* p. 686.

45　HAGAN, *supra* note 37, p. 220.

46　SUSSKIND, *supra* note 40, p. 70.

47　See, e.g., HAAPIO, Helena and GROTON, James P. From Reaction to Proactive Action: Dispute Prevention Processes in Business Agreements. *IACCM EMEA Conference, Academic Symposium*, London, 9 November 2007.

48　HIETANEN-KUNWALD, Petra. *Mediation and the legal system: Extracting the legal principles of Civil and Commercial Mediation.* Helsinki: Unigrafia, 2018, pp. 24–26.

The first is achieved by finding a solution that is procured from within the legal system, and 'correct' according to the law,[49] while the second refers to complying with objective requirements of procedure. In the absence of procedural fairness, finding the 'correct' solution would not be possible. Fairness in this context is reflected in the right to be heard, impartiality of the decision-maker and equality of arms, the right to file an appeal, etc. In principle, the role of UX/UXI is locked out from this closed deontic sub-system.[50] However, within the meaning of the third access to justice wave, the reception of alternative methods introduced collaborative strategies linked to subjective forms of substantive fairness. Reaching a decision because it is objectively it coheres with the system or is 'correct' is not as important as agreeing on an outcome that meets the parties' needs and interests and may be considered as fair.[51] The subjective perception of substantive fairness takes place when procedural aspects help ensure acceptable outcomes for the parties. Although the importance of subjective substantive fairness has been acknowledged, the objective procedural requirements will continue to be in place.[52] Mediation, for instance, is value driven and follows specific procedural principles that are included in the legislation and codes of ethics.[53]

Together with other collaborative ADR methods, mediation benefits from the direct and active participation of the parties, and relies on their transacting and contracting capacities. UX/UXI standards could enhance these communications (interactions) and processes, especially if they are mediatized by technology. Both the processes and the interfaces of Online Dispute Resolution (ODR) schemes upgraded with UX/UXI adjustments could increase subjective substantive fairness, if the procedural aspects of the systems are optimized.

The shift of focus from the objective to the subjective standards of substantive fairness has been seen as a challenge[54] and even detrimental to the achievements of the first and second waves of access to justice[55] for vulnerable groups, the consumers, for instance. People could be unaware of their rights and consent to

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49 LINDBLOM Per H. ADR – The Opiate of the Legal System: Perspectives on Alternative Dispute Resolution Generally and in Sweden. *European Review of Private Law*, 2008, vol. 16, no.1, p. 75.

50 The redesign of documents and legal communication for these processes, to improve awareness and understanding, and to facilitate compliance (sustainable outcomes) is possible. However, UX and UXI are not validity requirements or substantial to the objective application of decision making criteria in contracting or dispute resolution. It is not required by law these interactions and processes to be usable and/or friendly or regarded as objective access to justice enablers.

51 HYMAN, Jonathan M. and LOVE, Lela P. If Portia were a Mediator: an Inquiry into Justice in Mediation. *Clinical Law Review*, 2002, vol. 9, no. 1, pp. 157–164.

52 WALDMAN Ellen, *Mediation Ethics: Cases and Commentaries*: San Francisco, Jossey-Bass, 2011, p. 3.

53 HIETANEN-KUNWALD, *supra* note 8, p. 190.

54 CAPPELLETTI, GARTH and TROCKER, *supra* note 41, p. 698.

55 LINDBLOM, *supra* note 49, p. 70.

unfavourable situations; many lack negotiation skills and experience in dispute prevention or resolution. It is apparent that the procedural principles and the concept of substantive fairness developed in mediation (and ADR in general), may be at odds with the aim of giving effect to the 'legal rights' of the weaker party.[56] Another tension relates to the handle of information in respect of some forms of disputes. Dispute resolution procedures – formal and informal – create their own procedural 'truth.' Whereas in litigation, it corresponds to what is legally relevant and has been unambiguously established in the process, in ADR the procedural truth is subjective and depends on the parties' views and acceptability criteria.[57] Acceptability is an attribution factor of the dimension satisfaction in the legal UX/UXI taxonomy.[58]

The fourth wave of access to justice focuses is more concerned with the prevention of harm and the empowerment of the public. But just like justice, or fairness, empowerment is a difficult concept to grasp and tremendously hard to operationalize and measure. In mediation, to continue with examples from the dispute resolution field, it has been described as the gaining of a greater sense of strength and task-related competences, steaming from individual attitudes of self-recognition, like self-respect, self-confidence, and self-reliance. Because it is said to activate the inherent capacity for deliberation and decision-making,[59] empowerment would lead to shifts[60] in dynamics that should influence the parties' inputs and the quality of their interactions. Interventions motivating these changes should not endorse distributive or dishonourable conducts, in fact, empowerment as a simple re-distribution of power where the outcome is a transfer of strength from one party to another, is unlikely to increase access to justice overall.[61]

Effective empowerment in transactional contexts should relate to increased legal awareness, understanding and readiness to assume the responsibilities that well informed and rational decision making requires. Understood in this manner, it would presuppose that people are able to obtain pertinent, sufficient, accurate, clear and intelligible information, under the given circumstances. Unquestionably, the variables that could intensify information asymmetries are too many and unavoidable in some instances, for example, when resulting from physical or mental impairments or/and disabilities.[62] What is more, in the absence of these

56 WAGNER Gerhard. Harmonisation of Civil Procedure: Policy Perspective. In KRAMER, Xandra and Rhee, C. H. van (eds). *Civil Litigation in a Globalising World.* The Hague: T. M. C. Asser Press; Springer, 2012, p. 115.

57 HIETANEN-KUNWALD, *supra* note 42, p. 229.

58 SOLARTE-VASQUEZ, JÄRV and NYMAN-METCALF, *supra* note n 2.

59 BUSH, Robert A. and FOLGER, Joseph P. *The Promise of Mediation: The Transformative Approach to Conflict.* San Franciso, Jossey-Bass, 2005, p.13.

60 *Ibid,* p. 75.

61 *Ibid,* p. 76.

62 SHAPIRA, Omer, *A Theory of Mediators' Ethics: Foundations, Rationale, and Application.* Cambridge: Cambridge University Press, 2016, p. 138.

impairing factors, human cognitive biases[63] and other limitations of the mind could still reduce the scope of decision making options to bounded rationalities, in accordance with a limited set of heuristics and schemas. Transaction design has thus aimed at contributing with the specification of the criteria, based on the most encompassing dimensions and factors of attribution to define legal UX/UXI, but the minimum standards of some of these, the less objective in particular, are yet to be agreed upon.

Looking at the trajectory in the understanding of access to justice, it is easy to recognize the evolution of the understanding of fairness. Fairness has a crucial procedural function in dispute resolution processes, be them adjudicative or consensual:[64] procedural fairness enhances the legitimacy[65] of their outcomes. Objective procedural rules operate as safeguards, and their observance justify the decisions taken by the courts and the availability of state enforcement. This explains why the due process, along with the parties' consent, legitimizes the settlement and other transactional outcomes, adding to their acceptability.[66] It is suggested that the aspects fostering the perceptions of legitimacy in ADR also conform to elements that define the rule of law.[67] On the whole, the importance of having regard for the subjective experiences of justice should not be underestimated.

Procedural justice is said to embrace four core values linked to the new parametric criteria added to the Legal UX/UXI Taxonomy:[68] the first is voice; the disputants must have the opportunity to present their case, tell their story and be heard. The second is impartiality of the third party or neutrality, as assessed directly by the parties. Impartiality is anchored in regulation regarding all types of dispute resolution processes. The third is trustworthiness, which is also determined by the disputants as an inference about the behaviour of the neutral third party. The last value combines dignity and respect. The parties normally estimate the treatment they receive during over the course of dispute resolution processes.

Procedural justice research has found that principled legal negotiation strategies that adhere to the same values are equally important to legitimize agreements.

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63 PRUITT, Dean G and CARNEVALE Peter J. *Negotiation in Social Conflict* (Mapping social psychology series). Buckingham: Open University Press, 1993, p. 83.

64 On justice and the significance of procedural justice see also: DEUTSCH, Morton. Justice and Conflict. In DEUTSCH Morton, COLEMAN Peter T and MARCUS Eric C. (eds). *The Handbook of Conflict Resolution, Theory and Practice.* San Francisco: Jossey-Bass, 2006, p. 47.

65 TYLER, Tom R, *Why People Obey the Law*. New Haven and London: Yale University Press, 1990, p. 172.

66 On procedural fairness as justification for the binding force of the mediated settlement agreement: HIETANEN-KUNWALD, *supra* note 48, p. 202.

67 HOLLANDER-BLUMOFF, Rebecca and TYLER Tom R. Procedural Justice and the Rule of Law: Fostering Legitimacy in Alternative Dispute Resolution. *Journal of Dispute Resolution*, 2011, vol. 2011, no. 1. pp. 1, 2.

68 *Ibid,* p. 5.

Neutrality and trust, in spite of being notions strongly connected to the involvement of a third party, are relatable to the criteria on which the parties can rely to decide on their options.[69] While the process related elements voice and impartiality could be expressed in the form of legal principles and rules, the interpersonal elements escape that codification. Nonetheless, these subjective perceptions that are known to influence the acceptability of decision making outcomes so strongly[70] need to be operationalized for their adequate assessment. Trustworthiness, transparency and predictability, neutrality and the right to voice are some of the founding values-principles of responsibility in dispute prevention and resolution, and may be categorized as standards of transaction design in the systematization of legal UX/UXI criteria, as Table 2 shows. This is possible because of the proactive purposes shared by the legal design and the conflict management fields of study and applications, in an understanding where the former emerged as an advanced manifestation of the later.[71] The criteria address essential aspects of the fairness and empowerment problem in law that transaction design can help solve.

Table 2 Updated Taxonomy of UX/UXI factors for transaction design

UX Taxonomy components for transaction design		
Efficiency	Effectiveness	Satisfaction
Readability – clarity ***transparency** Consistency Organization Information visualization Learnability **Predictability** Flexibility User control	Completeness Relational and proactive (collaboration values and logic) Communication effect leading to consensus and satisfaction **Trustworthiness*** Pleasantly memorable – friendliness Sustainability	Awareness (taking notice) Understanding (knowing) Consensus ***voice** (wilful participation, engagement) Compliance (action) Overall satisfaction with the transacting experience (**acceptability****) ***perception of neutrality (impartiality and independence)** ***dignity and respect** and Sustainability of the agreement

* Components/elements of criteria within the factors mostly related to procedural justice and fairness
** Closely related to legitimacy Source: adapted from the Combined Taxonomy of Usability Components Applicable to Transactions.[72]

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69 HOLLANDER-BLUMOFF, Rebecca. Just Negotiations. *Washington University Law Review*, 2010, vol. 88, no. 2, p. 411; HOLLANDER-BLUMOFF and TYLER, *supra* note 12, p. 492.

70 HOLLAND-BLUMOFF and TYLER, *supra* note 67, p. 10.

71 The substantiation of this claim is available in SOLARTE VASQUEZ, JÄRV and NYMANN-METCALF, *supra* note 5.

72 *Ibid.*

The three dimensions efficiency, effectiveness and satisfaction were specified by two new factors and four subcomponents of other factors. Voice was seen to unify the criteria for participation and engagement and placed under consensus. This assessment tool will be complete with the determination of detailed scoring scales and rules for each criterion and factor of attribution.

The quest for fairness as acceptability and legitimacy should intensify regarding the processes and systems mediated, assisted and/or executed by computational means. The European Commission recently proclaimed trustworthiness as the core value of the European approach to the development of Artificial Intelligence (AI) and called for contributions for its elucidation.[73] The operationalization and measurability of that concept must be a priority in the development of legal technologies and the design or PSIPSs where AI will find extensive areas of applications.

4 Concluding remarks

This paper advanced earlier work on the Taxonomy of Legal UX/UXI factors for the human centered design of PSIPSs, adding parameters that could effectively realize the aspirations of fairness and empowerment of the preventive law approach and the legal design community. Marked emphasis was placed on strengthening the methodological rigor of this cross disciplinary research area. It was suggested that a better handle of legally relevant communication could be accomplished from within the law as a methodological strategy because the legal standards are nested in a deontic system based on general and abstract rules and governance objectives purposefully detached from individual 'users.' In addition, ergonomic, aesthetic and other non-normative values are tangential but not opposed to the law.

Novel methodological proposals should not rival or contradict the system, interfere with its goals or affect its vitality, for instance altering meanings of legal terms and provisions. Consequently, no objections should arise if the consideration of UX/UXI criteria became institutionalized in practice, as long as the change of mediums and visualizations does not mislead the public, stir semiotic controversies or produce unauthorized legal advice.

The UX/UXI taxonomy is a unique and valuable proposal, but it is still a work in progress. The categorization in general could be refined, and the metrics on the subjective criteria need scaling and testing. The parametric determination initiated with it facilitates a more formal scientific scrutiny, fruitful deliberation and progress in the update of the theory of contracts and obligations and its sociotechnical applications. Transaction design standards are excellent management tools for the practice that could inspire new legal categories.

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73 European Commission. *White Paper on Artificial Intelligence: a European Approach to Excellence and Trust.* COM (2020) 65 final.

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